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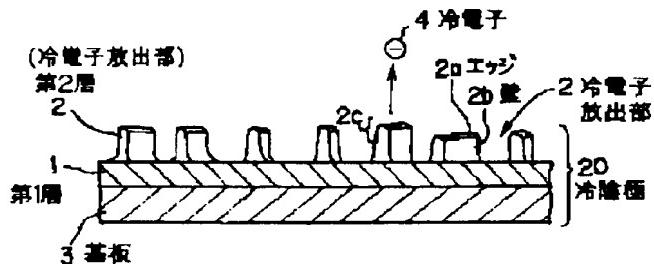
APPLICATION DATE : 07-01-98
 APPLICATION NUMBER : 10001680

APPLICANT : KOMATSU LTD;

INVENTOR : YAMAMOTO HIROSHI;

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TITLE : COLD CATHODE AND ELEMENT
 USING SAME



ABSTRACT : PROBLEM TO BE SOLVED: To allow an application to a display or the like by forming a cold electron emission part without using a micro machining technology for reducing the production cost, sufficiently increasing the density and homogeneity of a cold electron emission point for improving quality, preventing deterioration due to impurities, eliminating tip evaporation of a material and increasing a heat releasing function for improving durability, and lowering operating voltage and power consumption.

SOLUTION: A film (first layer 1 and second layer 2) made of carbon material such as carbon, graphite, amorphous carbon, DLC(diamond-like carbon) or diamond is formed on a substrate 3, thereby forming a projected cold electron emission part 2. In this case, cold electrons 4 are emitted from the tip 2c of the projected cold electron emission part 2.

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